

## CASE STUDY: São Paulo's landmark art museum revitalizes appearance

### Building

MASP

### Location

São Paulo, Brazil

### Window Film

SCL SR PS4

### Type

Safety and Security Film



## SITUATION

Built in the 1960's by architect Lina Bo, MASP, the São Paulo Art Museum, is one of the city's premier attractions. Works by the most famous artists of all time can be seen in the museum, including Picasso, Renoir, Cézanne and many others. Museum management was planning extensive renovations to revitalize the building's appearance and to protect the priceless works of art, but they did not want to alter the building's original characteristics.

## SOLUTION

Mr. Julio Neves, a renowned architect and also President of the Museum and Mr. Paulo Duarte, a Brazilian glass industry expert, chose to have a LLumar® clear safety film with scratch-resistant coating installed.

## RESULT

The installation exceeded his expectations. Mr. Neves explained, "LLumar safety film allows the same light transmission that was specified in the original project, thus not interfering with the way visitors perceive the works of art. The film's UV absorption properties will also provide excellent protection for the exhibits."

## Performance Data

	% Total Solar Transmittance	% Total Solar Reflectance	% Total Solar Absorbance	% Visible Light Transmittance	% Visible Reflectance (exterior)	% Visible Reflectance (interior)	Winter U-value	Shading Coefficient	% Ultraviolet Ray Protection (wavelengths 280-380nm)	Emissivity	Solar Heat Gain Coefficient	% Total Solar Energy Reflected	Light-to-Solar Heat Gain Ratio (LSG)	% Summer Solar Heat Gain Reduction	% Winter Heat Loss Reduction	% Glare Reduction
Clear Glass	83	8	9	90	8	8	1.03	1.00	29	0.84	0.86	14	1.05	-	-	-

### Clear Series

Clear safety films can be applied over tinted glass to improve aesthetics, solar performance and glare. These thicker films meet the most stringent standards for burglary resistance, blast mitigation, wind-borne debris, and basic safety glazing.

SCL SR PS4	82	10	8	88	10	10	1.05	0.97	94	0.86	0.84	16	1.05	2	-1	2
------------	----	----	---	----	----	----	------	------	----	------	------	----	------	---	----	---

## Physical Properties

	Film Thickness (inches)	Appearance	Film Structure	Tensile Strength (constructed)	Tensile Strength (average as reported)	Break Strength (peak load)	Break Strength (average load)	Elongation at Break	Peel Strength	Puncture Strength
SCL SR PS4	0.004	Clear	Single	34,555	32,000	135	133	>100%	>2720(>6)	70

## EASTMAN

LLumar.com

The solar performance data reported for LLumar architectural window films was captured using the National Fenestration Rating Council's (NFRC) standard guidelines for window film solar performance measurement as measured on single pane, 1/8 inch (3 mm), clear glass. Reported values are taken from representative product samples and are subject to normal manufacturing variances. Actual performance will vary based on a number of factors, including glass type and properties. Films do not eliminate fading - they reduce it. UV rays and heat are contributing factors to fading, but other factors exist. For further information, see [LLumar.com/download-library](http://LLumar.com/download-library). © 2016 Eastman Chemical Company. LLumar® and the LLumar® logo are trademarks of Eastman Chemical Company or one of its wholly owned subsidiaries. As used herein, ® denotes registered trademark status in the U.S. only. (06/16) L2152